11-3-2009

Talk to Me: Issues in Acquiring Spoken Language for Young Children with Autism Spectrum Disorders

Rhea Paul
Sacred Heart University

Recommended Citation

Paul, R. (2009). Talk to me: Issues in acquiring spoken language for young children with autism spectrum disorders. *ASHA Leader, 14*(14), 10-13.

Talk to Me: Issues in Acquiring Spoken Language for Young Children with Autism Spectrum Diso
Paul, Rhea
ASHA Leader; Nov 3, 2009; 14, 14; ProQuest Nursing & Allied Health Source
pg. 10

Talk to Me

Clinical fellow Megan Lyons engages Jimmy in the motor imitation portion of Rapid Motor Imitation Antecedent training.

In light of the recent increase in the number of children with ASD who enter school with some functional speech, it appears possible for more children with ASD to acquire speech.

by Rhea Paul

Speech-language pathologists play a critical role in the treatment of children with autism spectrum disorders (ASD) because communication deficits are a primary component of both the diagnostic criteria and the focus of educational services for children with these conditions. Children with ASD almost always are delayed in speech acquisition (Tager-Flusberg, Paul, & Lord, 2005), as well as in other areas of communication. Lack of speech is often the most obvious symptom and greatest cause for concern of parents of toddlers who are eventually diagnosed with ASD, even though closer observation usually reveals additional problems.

For many families of children with ASD, having their child learn to talk is a primary goal—and for good reason. Children with ASD who learn to use spoken language as a primary means of communication have better outcomes than those who don't (Howlin, 2005). These children have more opportunities for social interactions with family and peers. They have a wider audience for communication and they have a greater chance of participation in mainstream settings in school and beyond.

Although precise statistics are not available, the consensus among professionals 10–15 years ago was that about 40% of children with ASD did not acquire functional spoken language, and these children generally had the poorest long-term outcomes. More recently, perhaps due to earlier identification and intervention, the proportion of children who reach school age without spoken language has decreased. Many experts estimate the current proportion of children with ASD who do not speak to be between 20% and 30% (Rogers, 2006).

The use of augmentative and alternative communication (AAC) may always be a necessary adjunct to the communicative repertoire for prelinguistic children with ASD and may serve as either a transitional or more permanent mode of communication for some. However, in light of the recent increase in the number of children with ASD who enter school with some functional speech, it appears possible for more children with ASD to acquire spoken language. In fact, the development of intervention methods that result in 90% of children with ASD acquiring spoken language is one of the long-term goals identified by the National

Issues in Acquiring Spoken Language for Young Children with Autism Spectrum Disorders

Institutes of Health's Interagency Autism Coordinating Committee.

Promoting Speech Development

The question for SLPs, then, is how to facilitate the emergence of meaningful spoken language most effectively and efficiently, so that the largest possible number of children will acquire speech at the earliest point in development. Speech development will certainly not be the only goal for SLPs working with these children, but it is an important goal for prelinguistic children with ASD. Other important communication goals will include increasing the rate of communication; using more social forms of communication beyond making requests; using and integrating communicative gestures, gaze, and vocalizations in communication; enhancing social engagement; and reducing maladaptive forms of communication and behavior.

Unfortunately, research on clinical intervention in children with ASD has not yet yielded a clear direction for enhancing early communication. The research results are encouraging because they reveal that a variety of approaches—from the most structured discrete trial instruction methods to more open-ended, child-centered methods—demonstrate some efficacy both for increasing communication and eliciting first words from nonspeaking young children with ASD. Unfortunately, little information is available to help determine which methods are more effective than others, for which children, and at what point in development. In other words, we know it is possible to enhance communication and induce speech in prelinguistic children with ASD, but we don't know the best way to do it.

Several research groups around the country are trying to close this gap by using research designs that randomly assign children to one of two different treatments and then comparing the two groups to determine which treatment works better. Although these research designs won't answer the question of how to identify the best treatment for an individual child, the research can help us begin to evaluate the relative efficacy of various treatment approaches.

Our team became interested in researching this question for several reasons. There was tremendous pressure from parents of toddlers for "ABA (applied behavior analysis) therapy" (which in the minds of many means a discrete trial approach) for their children with ASD, and a complete lack of studies making direct comparisons between traditional behaviorist approaches and other forms of intervention. In addition, despite evidence in favor of such discrete trial instruction approaches, they have come to be regarded unfavorably by SLPs.

Although widely used during the 1970s, behaviorist approaches fell out of favor in our field in response to accumulating evidence (summarized by Fey, 1986) that, although these approaches were helpful in inducing new behaviors like speech, behaviors taught this way were difficult to generalize. Children did not transition easily from using these approaches within treatment sessions to using them independently for functional communication.

A second reason was the "pragmatics revolution" our field experienced in the late 1970s and early 1980s. This shift arose from the burgeoning interest in interactionist models of language development, which postulate that children do not learn language through either innate, "hard-wired" mechanisms or by simple imitation of what they heard. Instead, these models maintain that language is learned through interactions with others, during which children learn language forms primarily to fulfill their growing needs to express communicative intentions (Chapman, 1992).

In addition, the focus on pragmatics led to the conclusion that it was communication that needed to be enhanced in children with disorders. Once communication was present, the thinking went, children would acquire the language forms that were needed to express the communicative intents they had developed, unless they had a sensory (hearing impairment) or motor impediment to acquiring spoken language. And if that were the case, we could provide an augmentative or alternative modality for their expression, such as signs, pictures, or a voice output communication aid.

Thus, instead of addressing the shortcomings of behaviorist approaches by providing structured generalization training and supplementing discrete trial training with more naturalistic methods, many SLPs simply abandoned behaviorist approaches and spoken language development assumed secondary status in the hierarchy of goals for preverbal children.

Still, research has demonstrated that discrete trial methods are capable of eliciting first words in some children with ASD who previously did not speak (Rogers, 2006). Granted, these words do not always migrate spontaneously into functional communication, but perhaps there is a way to take the raw material of initial spoken words produced by discrete trial instruction and use additional methods to move them into more functional communication. Some research has suggested that training parents to use responsive strategies when communicating with their children with ASD enhances the efficacy of communication intervention (Siller & Sigman, 2008). Could parent training in responsiveness could do the same for the new words learned through a discrete trial instruction method?

Comparing Intervention Approaches

To answer this question, a discrete trial instruction approach in combination with parent responsiveness training was compared with parent training combined with a more naturalistic approach known to have

*See **Autism** page 12*

Autism from page 11

SLP Elizabeth Schoen begins speech production with Mari in the Rapid Motor Imitation Antecedent training group.

efficacy for improving communication. Milieu Communication Training (Yoder & Stone, 2006), developed by Yoder and colleagues, met this criterion and included a parent responsiveness training component. A randomized controlled design could be devised in which parent responsiveness training was used for parents of children experiencing each of the two treatments being compared.

A discrete trial instruction program specifically designed for eliciting speech in preverbal children with ASD was chosen. Rapid Motor Imitation Antecedent training, a method developed by Ioanna Tsiouri and her mentor R. D. Greer, met this requirement. It also had some evidence demonstrating efficacy and was built on a reasonable theoretical foundation. A published case series (Tsiouri & Greer, 2003) demonstrated that the method led to the production of words used not only as requests, but also as labels by older preschoolers with ASD who had not spoken previously. Moreover, the case series provided a good theoretical rationale for concluding that Rapid Motor Imitation Antecedent training provided a means to get from not talking to talking.

Rapid Motor Imitation Antecedent training requires the child to imitate a series of several simple motor actions, starting with gross motor movements, moving to smaller movements focused on the face, and culminating with an approximation of a verbal stimulus. Tsiouri and Greer invoked the concept of behavioral momentum to explain how this method might work: Instructions are given to produce a series of behaviors (like simple motor imitation) that are reinforced very quickly and consistently. Then an instruction less likely to elicit compliance (like imitating a verbal stimulus) is chained onto the end of the series, increasing the likelihood of compliance with the last behavior. The idea is to use the momentum toward compliance created by the imitation of the easier, high-probability behaviors to elicit the difficult new behavior. This approach would be contrasted with a version of Milieu Communication Training that also focused on eliciting words in the context of more natural, child-directed interactions.

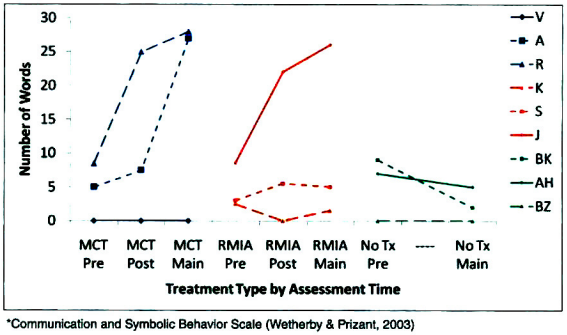
The study, which was implemented by our team, requires participants to undergo diagnostic evaluation and intensive assessment of cognitive, social, communication, and language skills. Children are randomly assigned to either Rapid Motor Imitation Antecedent training or Milieu Communication Training conditions and receive 36 sessions of treatment with an SLP. All parents receive eight to 10 hours of parent responsiveness training. Each child is re-evaluated at the end of the 36 sessions and again at three to six months following the completion of treatment to determine if any improvements are maintained. Of the nine children who have completed the protocol so far, three experienced Milieu Communication Training plus parent responsiveness training, three received Rapid Motor Imitation Antecedent training plus parent responsiveness training, and three served as no-treatment controls and will be offered treatment later. Because the groups are not yet large enough to examine group trends, this article contains only a preliminary look at individual subject data.

Figure 1 (p. 13) shows the number of meaningful words produced spontaneously by each child at the pretreatment (pre), post-treatment (post), and maintenance (main; 3–6 months following the termination of treatment) points on a direct assessment, the Communication and Symbolic Behavior Scales (CSBS), administered by a rater blind to the subject's treatment status. Figure 2 shows the number of words produced by the child as indicated by parent report on the MacArthur-Bates Communicative Development Inventory (CDI) for the same time points. Although the parents, of course, were not blind to whether the children received treatment, the testers from our staff did not know whether a child experienced treatment, or which treatment was received.

Look Who's Talking

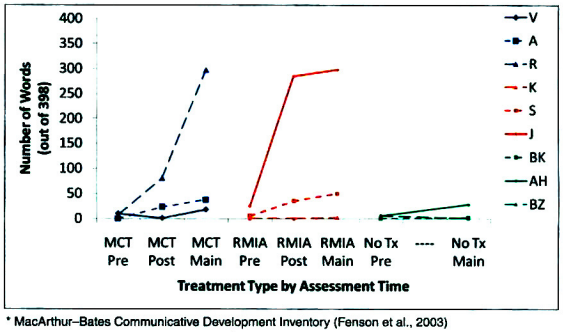
These preliminary results show that for both treatments, at least one of the three children showed dramatic progress. R., age 3, who received Milieu Communication Training, was one of these stars. She produced some echolalia at the beginning of intervention but almost no spontaneous speech. By the end of intervention she was producing more than 100 words by parent report on the CDI and had gone from fewer than 10 to more than 25 words produced on the CSBS behavioral sample. A., age 4, in the Milieu Communication Training group, also did well. A quiet 4-year-old with only a few gross word approximations at the beginning of intervention, he increased his spontaneous word productions from 0 to 40 by parent report on the CDI. He also showed some

Figure 1. Number of words produced during behavioral sample on CSBS*



*Communication and Symbolic Behavior Scale (Wetherby & Prizant, 2003)

Figure 2. Words produced by parent report on CDI*



* MacArthur–Bates Communicative Development Inventory (Fenson et al., 2003)

change on the CSBS at the end of the intervention, but the really dramatic change occurred between the end of intervention and the maintenance assessment, perhaps facilitated by interactions afforded by the parent responsiveness training. When presented with a jar of cereal during the maintenance assessment, he spontaneously said, "I want 10 Cheerios." V., age 3½, the third child who received Milieu Communication Training, produced more vocalizations at the beginning of the study than either R. or A., but he also produced more atypical sounds, such as screeches and self-directed babble. V. showed little change across the three time periods.

J., age 5, who received Rapid Motor Imitation Antecedent training, produced a few gross word approximations as well as some other vocalizations before treatment. J. showed dramatic change on both the parent report and blind clinician ratings of word production. His dad reported hearing "Are we there?" in the car on the way to treatment. He turned around to see who was talking because he had never heard J. piece together a string of words, let alone a real question. J. maintained his gains during the maintenance period and continues to talk in sentences. The parents reported that 5-year-old S., who began the study exhibiting some echolalia but no spontaneous speech, was using some meaningful words at home. She went from a score of 0 words produced on the CDI at pretreatment to 75 words at maintenance, but these gains were not reflected in her performance in spontaneous use of communicative words during the CSBS with a blind rater. K., in the Rapid Motor Imitation Antecedent group, was both the quietest and the oldest child in this group. Two months shy of age 6, she produced almost no sounds, and showed little change on either of the measures. Similarly, none of the children in the no-treatment control group showed a great deal of change over the three assessment points.

This preliminary snapshot of data on eliciting speech from preverbal children with ASD seems to confirm earlier findings that a variety of methods can be useful not only in increasing communication, but also in engendering first words in children with ASD.

Second, it provides some preliminary support for the hypothesis that supplementing direct intervention for the child with naturalistic opportunities for maintenance and generalization provided by trained parents can lead to meaningful use of language in this population, even when a discrete trial approach is used. Third, it suggests that at least some children with ASD who do not begin speaking spontaneously by the late preschool period can be induced to do so with intensive intervention focused specifically on eliciting spoken language.

> At least some children with ASD who do not spontaneously begin speaking by the late preschool period can be induced to do so with intensive intervention.

Comprehensive Approach

SLPs may want to consider implementing evidence-based methods designed to elicit spoken language from preverbal children with ASD at least through the late preschool years, even when other AAC methods are included in the intervention program. A comprehensive approach to communication intervention in preverbal young children with ASD would comprise several components. Intervention might include activities designed to increase the frequency and range of communicative acts, regardless of mode of expression, with methods like those used in standard Milieu Communication Training as well as the use of AAC approaches. An additional component of the intervention plan would include activities specifically designed to elicit speech in either naturalistic or clinician-directed activities that require vocal and eventually verbal productions. A third component may include training parents or other caregivers to provide opportunities for the child to engage in repeated practice of the use of new communicative forms and functions in everyday activities. Although the evidence is not yet complete, such a comprehensive program may be a way to increase the proportion of children with ASD who acquire the essential tool of spoken language.

Rhea Paul, PhD, CCC-SLP, *is professor and director of the communication disorders section at the Yale Child Study Center. Contact her at rhea.paul@yale.edu.*

This research is funded by the Autism Speaks Foundation.

Selected References

Rogers, S. (2006). Evidence-based intervention for language development in young children with autism. In T. C. W. Stone (Ed.), *Social and communication development in autism spectrum disorders: Early identification, diagnosis, and intervention.* NY: Guilford.

Tsiouri, I., & Greer, R. (2003). Inducing vocal verbal behavior in children with severe language delays through rapid motor imitation responding. *Journal of Behavioral Education, 12*(3), 185–206.

Yoder, P., & Stone, W. (2006). Randomized comparison of two communication interventions for preschoolers with autism spectrum disorders. *Journal of Consulting and Clinical Psychology, 74*(3), 426–435.

Tager-Flusberg, H., Rogers, S., Cooper, J., Landa, R., Lord, C., Paul, R., et al. (2009). Defining spoken language benchmarks and selecting measures of expressive language development for young children with autism spectrum disorders. *Journal of Speech, Language, and Hearing Research, 52,* 643–652.

Additional references for this article can be found at *The Leader Online.* Search on the title of the article.